Evaluation of Bacterial Species to Determine Antimicrobial Resistance in Patients with Chronic Rhinosinusitis after Surgery of Paranasal Sinuses Referring to Amiralmomenin Hospital in Rasht, 2018

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ABSTRACT

Background and Aim: Bacterial resistance to antibiotics has made treatment difficult. The purpose of this study was to investigate bacterial species in patients with chronic rhinosinusitis after surgery of paranasal sinuses to determine antimicrobial resistance patterns of them.

Materials and Methods: The data of 70 patients after paranasal sinuses surgery in Amiralmomenin hospital in Rasht city, in 2018 were evaluated. The identification of bacteria by microbiological laboratory methods and microbial susceptibility test was performed by disk diffusion method. For data analysis, SPSS version 22 software and chi-square test were used ($p \leq 0.05$).

Results: 62 (88.57%) positive bacterial culture samples were identified. The most abundant strains was *Staphylococcus epidermidis* (38.70%). *Staphylococcus aureus* had the highest antibiotic resistance to penicillin and oxacillin (52.94%) and *Staphylococcus epidermidis* to penicillin (62.50%). Highest antibiotic resistance in *Pseudomonas aeruginosa* was to ceftazidime (90.90%). *Escherichia coli* was resistant to ceftazidime and ampicillin (100%) and *Hafnia alvei* was resistant to ceftazidime (100%). *Klebsiella aerogenes* had higher resistant to ceftazidime and cefixime (100%). With increasing of patient's age, resistance to antibiotics increased ($p \leq 0.05$).

Conclusion: Antibiotic resistance was observed in bacterial samples isolated from patients after surgery. Given that antibiotic resistance may cause failure in the treatment. Monitoring of the antibiotic-resistant pattern is necessary to select the appropriate antibiotic.

Keywords: Bacterial Species, Antimicrobial Resistance Pattern, Chronic Rhinosinusitis, Paranasal Sinuses

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